

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

To:

see form PCT/ISA/220

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/EP2004/000449

International filing date (day/month/year)  
21.01.2004

Priority date (day/month/year)  
24.01.2003

International Patent Classification (IPC) or both national classification and IPC  
E02F3/36

Applicant  
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**1. This opinion contains indications relating to the following items:**

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/EP2004/000449

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material:  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing:  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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**Box No. II Priority**

1. ☒ The following document has not been furnished:

- ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).
- ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

**Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	3-6	→ 4, 5, 6
	No: Claims	1-2, 7, 8	
Inventive step (IS)	Yes: Claims	4-6	→ 4, 5, 6
	No: Claims	3	
Industrial applicability (IA)	Yes: Claims	1-8	
	No: Claims		

2. Citations and explanations

**see separate sheet**

**Box No. VI Certain documents cited**

1. Certain published documents (Rules 43*bis*.1 and 70.10)

and / or

2. Non-written disclosures (Rules 43*bis*.1 and 70.9)

**see form 210**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

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**Box No. VII Certain defects in the international application**

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The following defects in the form or contents of the international application have been noted:

**see separate sheet**

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**Box No. VIII Certain observations on the international application**

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The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement;

8 X 1 Clarity and Interpretation

The formulation of current independent claim 1 is unclear (Article 6 PCT, see Item VIII). For assessing novelty and inventive step the subject-matter is interpreted as following:

From perusal of the description, claims and drawings the subject-matter for which this international search opinion has been carried out is the following:

A quick coupling device (1, 2) for coupling tools (3) on machines, especially agricultural, transport, lifting, digging and earth-moving machines, said machines comprising an articulated arm (4) having a distal end portion to which a rigid tool (3) is couplable,

characterised in that the quick coupling device (1, 2) comprises:

- an adaptor (2) joinable to said articulated arm (4) through at least one master pin (7), the adaptor (2) comprising a substantially flat base plate (17) with first side walls (10), and displaceable locking means (13) protruding transversely through the side walls (10); and
- coupling means (1) attachable to the tool (3) and comprising rigid hooks (5, 5', 6, 6') engageable with said at least one master pin (7) and second side walls (9) with openings (8) aligned with the displaceable locking means (13) of the adaptor (2) when the device is in use in its locking position,

wherein the first side walls (10) of the adaptor (2) are, in use, locked between the second side walls (9) of the coupling means (1),

wherein at least a part of the first side walls (10) comprises inclined surface portions (10') converging in the coupling direction and/or at least a part of the second side walls (9) of the coupling means (1) comprise converging inclined surface portions (9'), such that the base plate (17) of the adaptor (2) is in contact with a corresponding substantially flat-surfaced portion (17') of the tool (3) when the adaptor (2) is locked onto the coupling means (1) and tool (3), respectively, by engaging the displaceable locking means (13) with the openings (8) of the coupling means.

## 2 Novelty

2.1 In the terms of such an interpreted claim 1, EP-A-1156161 (=D1) shows in figures 1-4,

a quick coupling device (2, 3) for coupling tools (201) on machines, said machines comprising an articulated arm (1) having a distal end portion to which an rigid tool (201) is couplable,

wherein the quick coupling device (2, 3) comprises:

- an adaptor (3) joinable to said articulated arm (1) through at least one master pin (401), the adaptor (3) comprising a substantially flat base plate (307) with first side walls (306), and displaceable locking means (7) protruding transversely through the side walls (see figures 3, 4); and
- coupling means (2) <sup>205</sup>attachable to the tool (201) and comprising rigid hooks (203) engageable with said at least one master pin (401) and second side walls (205) with openings (204) aligned with the displaceable locking means (7) of the adaptor (3) when the device is in use in its locking position (see figure 3),

wherein the first side walls (306) of the adaptor (3) are, in use, locked between the second side walls (205) of the coupling means (2),

wherein at least a part of the first side walls (see the conical portions at the outer side of side walls 306 in figure 3, which are considered as equivalent to the embodiment of claim 2 or figure 7 of the current application, also the plate 304 can be regarded as converging inclined portions of the side plates 306, see figures 1, 2) comprise inclined surface portions (conical portions in figure 3) converging in the coupling direction, such that the base plate (307) of the adaptor (3) is in contact with a corresponding substantially flat-surfaced portion (207) of the tool (201) when the adaptor (3) is locked onto the coupling means (2) and tool (201, see figure 2), respectively, by engaging the displaceable locking means (7) with the openings (204) of the coupling means (2).

All the features of such an interpreted claim are known from D1. Thus, such a claim does not comply with Article 33(1)(2) PCT.

2.2 The features of current claims 2, 7 and 8 are not considered to contribute to novelty over D1:

Claim 2: Conical portions are shown in D1, figure 3;

here reason

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AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/EP04/00449

*fine razón*

Claim 7: Matching chamfered surfaces are known from D1, see plate 304 matching with tool portion 202;

*fine razón*

Claim 8: The free ends of the locking elements 702 can be seen from the outside (see figure 4 of D1);

2.3 The features of claim 3 are not considered to contribute to an inventive step over the obvious combination of documents:

Claim 3: D1 + EP-A-0609176 (=D2) or D1 + WO-A-0037742 (=D3): See D3 wedging effect in figures 4-6, 12-14; D2 figures 1 and 2;

The technical effect of such an arrangement can be summarised as:

The coupling parts are well guided into their locking position;

The objective technical problem could be formulated as: Improving the coupling of such a quick coupler.

An average skilled person starting from D1 and wishing to solve said objective technical problem would combine the teaching of D2 or D3 with that of D1 and would arrive at the subject-matter without involving an inventive step.

2.4 The subject-matter of claims 4-6 is neither known from nor rendered obvious by the available prior art. Coupling means comprising four rigid hooks so as to enable a "normal" coupling orientation and an "inverse" coupling orientation of the tool are not known in their present form in the available prior art.

The objective technical problem could be formulated as: Increasing the versatility of such a quick coupler.

FR-A-2701047 (=D5) and DE-U1-20006408 (=D6) show movable hooks on the adaptor side enabling the coupling of a tool in a "normal" and an "inverse" orientation. But, the combination of these documents D1 and D5 or D1 and D6 would not be obvious and would not result in the claimed subject-matter.

**Re Item VI**

Certain documents cited;

**3 Certain published documents**

Application No

Publication date

Filing date

Priority date (valid claim)

Patent No

(day/month/year)

(day/month/year)

(day/month/year)

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INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/EP04/00449

WO 03/027401

03.04.2003

25.09.2002

26.09.2001

**Re Item VII**

Certain defects in the international application:

- 4 Prior art documents, in particular D1 has not been cited in the description (Rule 5.1(a)(ii) PCT).

**Re Item VIII**

Certain observations on the international application;

- 5.1 The claimed "and" combination in claim 1 wherein both the inner surface of the coupling means (1) and the outer surface of the adaptor (2) having converging slopes and wherein the coupling means (1) houses the adaptor (2) in connection with the base plate (17) being "in contact with the corresponding essentially flat-surfaced part (17') of the tool (3)" does not seem to be technically reasonable and renders the subject-matter unclear (Article 6 PCT).  
The same objection applies to claim 3.

- 5.2 The embodiment of figures 7 to 10 does not fall under the claimed subject-matter because there does not seem to be "a contact" between the base plate (17) and a surface of the tool (3). See especially the protruding side plate portions in the direction of the tool in figure 7 (PCT-Guidelines Section IV; Chapter III, 4.3).